Above all else, we are committed to the care and improvement of human life.

Confronting the Opioid Crisis: Using non-opioid alternatives to control pain

- Rachael Duncan, PharmD BCPS BCCCP

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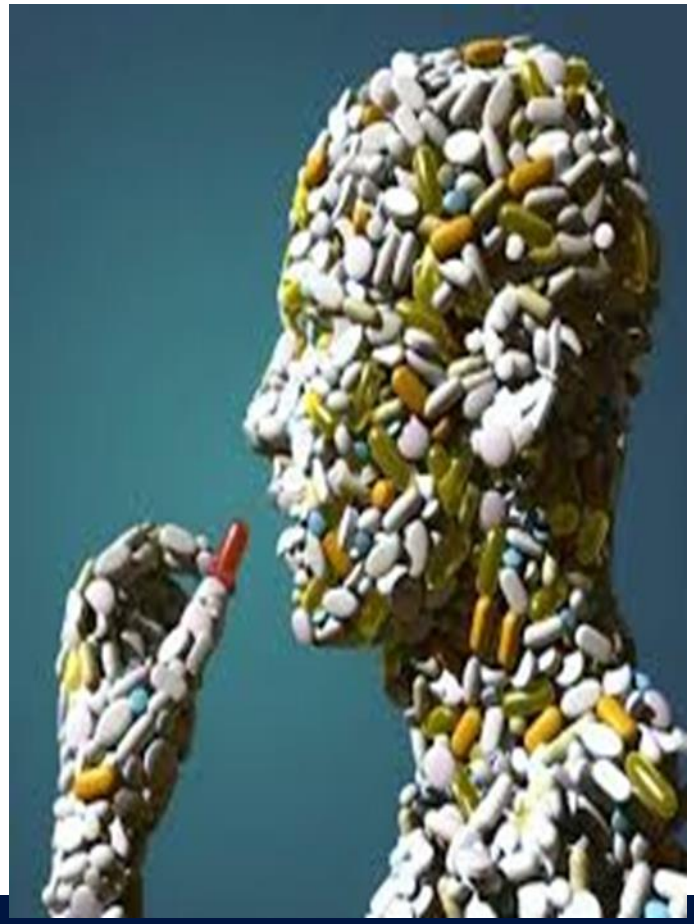
Objectives

- Discuss the current state of the opioid crisis and introduce the concept of “ALTO” = Alternatives to Opioids
- Review the implementation of an ED opioid-reduction process and policy
- Present the results of a pre- and post-implementation pilot study at Swedish Medical Center and other participating sites

Background

- The United States has 10% of the world's population, yet consumes more than 80% of the world's opioids
- In 2010, opioid consumption was 710 MME per person in the US on a yearly basis



Opioids DO NOT Cause Addiction

Study published in 1986

- Small (38 patients)
- Unknown selection criteria
- Not randomized, not blinded
- 2/3 of patients received 20 MME (morphine milligram equivalence)/day or less

Conclusion:

Risk of addiction when treating chronic pain was less than one percent

Pain. 1986 May;25(2):171-86

Pain. 1986 May;25(2):171-86

All patients have a right to pain control

The Medical Minute. The Opioid Crisis: Solutions for Colorado.
1999 Veterans Health Administration Memorandum:
Pain as the Fifth Vital Sign. March 1, 1999.

The Medical Minute. The Opioid Crisis: Solutions for Colorado.
1999 Veterans Health Administration Memorandum:

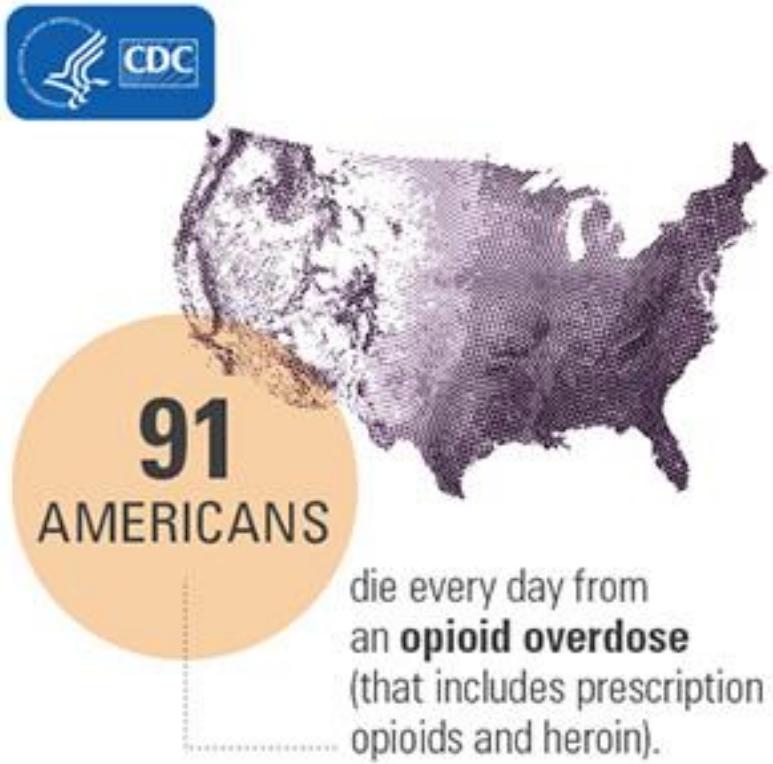
Pharmaceutical Industry

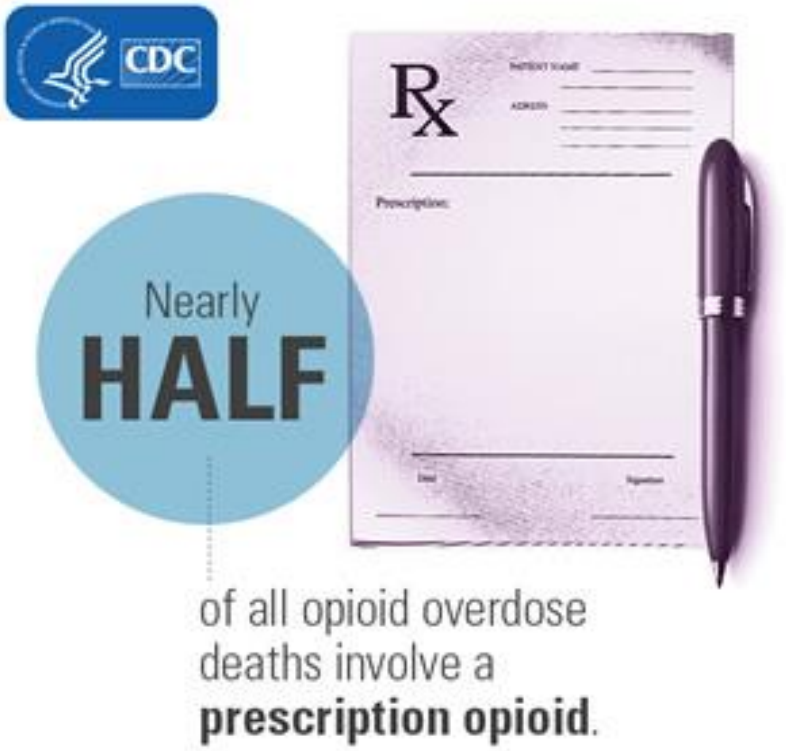
$$ spent in marketing and advertising of products

- **Ex: 2007**—Purdue Pharma pled guilty to federal criminal charges for misleading advertisement regarding the safety of OxyContin time release
  - **Fined:** $600,000,000
  - **Sales:** $22,000,000,000 over the past decade
  - **2010**—Reformulated OxyContin to make it more difficult to inject or snort

The New York Times: In Guilty Plea, OxyContin Maker to Pay $600 Million

Today = Opioid Crisis





www.CDC.gov/drugoverodse/epidemic/

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What's the answer? ALTO Approach

Alternatives To Opioids

- Multi-modal non-opiate approach to analgesia for specific conditions
- **Goals:** To utilize non-opiate approaches as first line therapy and educate our patients
  - Opiates will be second line treatment
  - Opiates can be given as rescue medication
  - Discuss realistic pain management goals
  - Discuss addiction potential and side effects of opioids

Lidocaine

- Used **topically**, **intravenously**, or as **trigger point injections**
- MSK, migraines, renal colic, abdominal, neuropathic
- Lidocaine patches are great for pain!
- Lidocaine IV doses </= to 1.5 mg/kg over 10 min may be given in non-ICU areas (max 200 mg/dose)
  - When used at low doses, IV lidocaine is generally benign
  - **Caution** should be used when giving IV to patients with a severe cardiac history
  - Over 1 hour on the inpatient units

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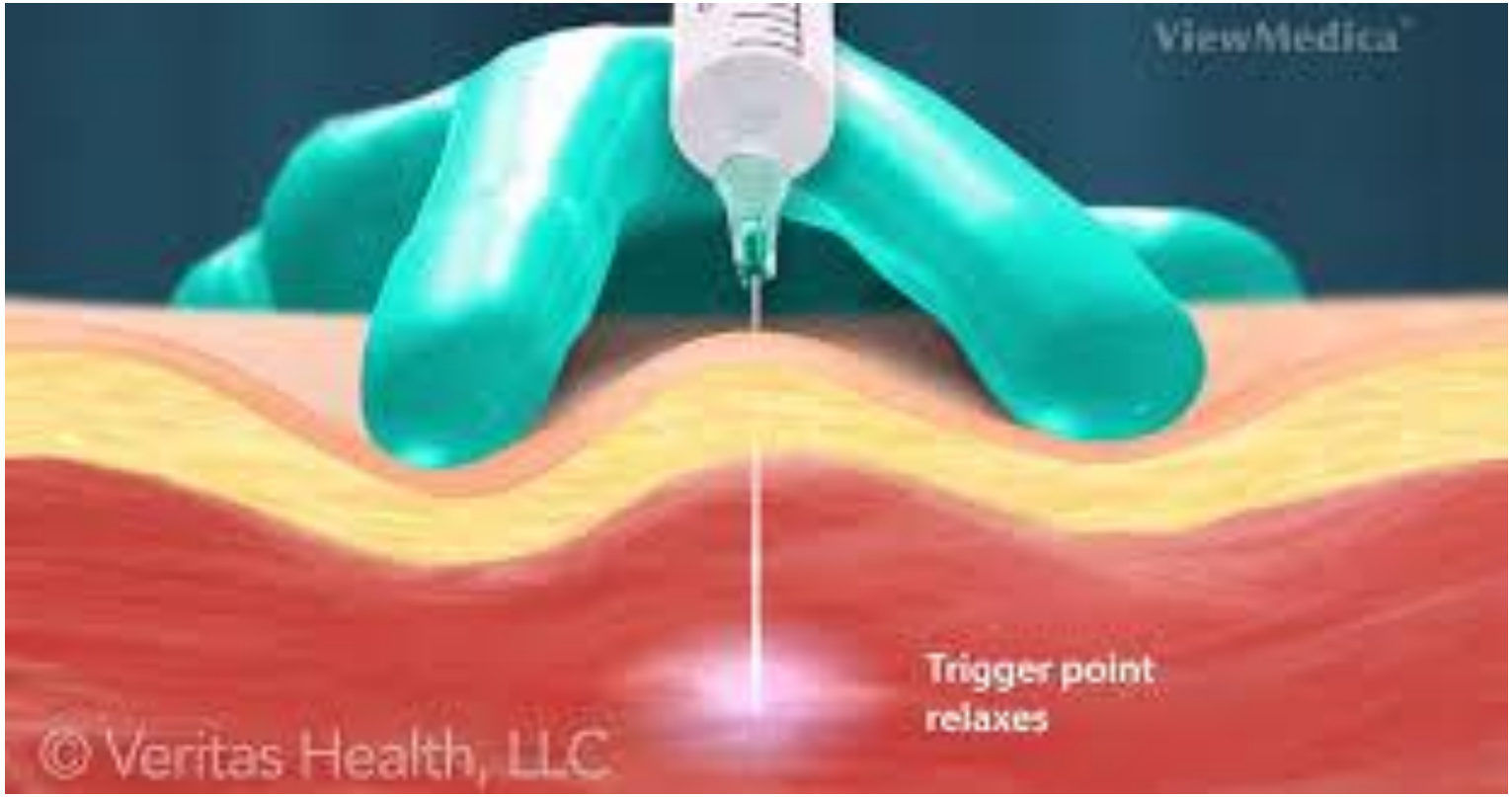
Trigger Point Injections



www.spineandpain.com

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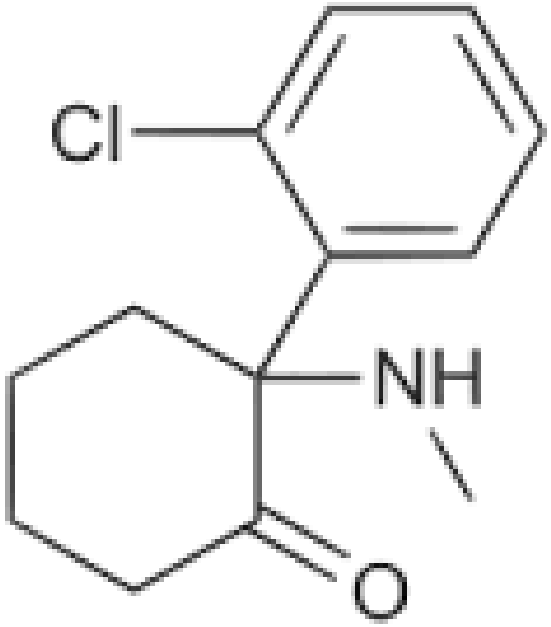
Ketamine

- Antagonizes NMDA receptors
- When using ketamine at a low dose, it is generally benign
- Used **intranasally** or **intravenously**
- Should not be used in patients with PTSD
- Can be used adjunctively with opioids to reduce opioid requirements



Ketamine

- Ketamine use is dose-dependent
- May be used for analgesia
  - Doses </= 0.2 mg/kg via slow IVP or IVPB over 10 min
  - Can be followed by 0.1 mg/kg/hr infusion
  - May be given in non-ICU areas
- Ketamine 50 mg IN can also be given
  - No IV access

Other Options

- **Ketorolac**
  - 15 mg for everyone!
    - No difference in pain reduction with 30 vs 15 mg*
  - Great for many pain indications including musculoskeletal pain and renal colic
- **Haloperidol**
  - Low dose (1-2.5 mg IV)
  - Great for nausea
    - Cannabinoid induced hyperemesis

Motov S. *Ann Emerg Med* 2016.

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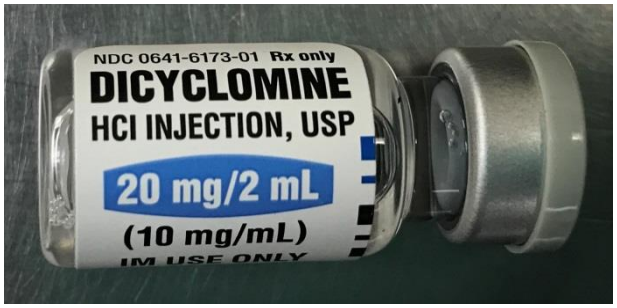
Other Options

- **Dicyclomine**
  - MOA: antispasmodic and anticholinergic agent that acts to alleviate smooth muscle spasms in the GI tract
  - 20 mg/kg PO/IM (NOT IV!)
  - Great for abdominal pain (think cramps)
  - Caution in elderly



ED Pain Treatment Pathways

Headache/Migraine

1st Line/Immediate

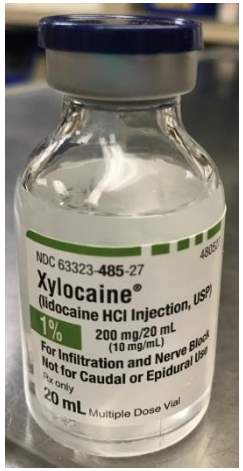
1 L 0.9% NS + high-flow oxygen

Ketorolac 15 mg IV

Dexamethasone 10 mg IV

Metoclopramide 10 mg IV

Trigger point injection with lidocaine 1%



2nd Line/Alternative

APAP 1000 mg PO + IBU 600 mg PO

Promethazine 12.5 mg IV OR prochlorperazine 10 mg IV

DHE 1 mg IV OR Sumatriptan 6 mg SC

Magnesium 1 g IV

Valproic acid 500 mg IV

Lidocaine 1.5 mg/kg IV

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Musculoskeletal Pain

Non-IV Options

APAP 1000 mg PO + IBU 600 mg PO

Cyclobenzaprine 5 mg PO OR diazepam 5 mg PO

Ketamine 50 mg IN

Trigger point injections 1-2 mL lidocaine 1%

IV Options

Ketamine 0.2 mg/kg IV + 0.1 mg/kg/hr gtt

Ketorolac 15 mg IV

Dexamethasone 8 mg IV

Diazepam 5 mg IV

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Renal Colic

1st Line/Immediate
Ketorolac 15 mg IV
Acetaminophen 1000 mg PO
1 L 0.9% NS bolus

2nd Line

Lidocaine 1.5 mg/kg IV

Alternative

DDAVP 40 mcg IN

Ketamine 50 mg IN

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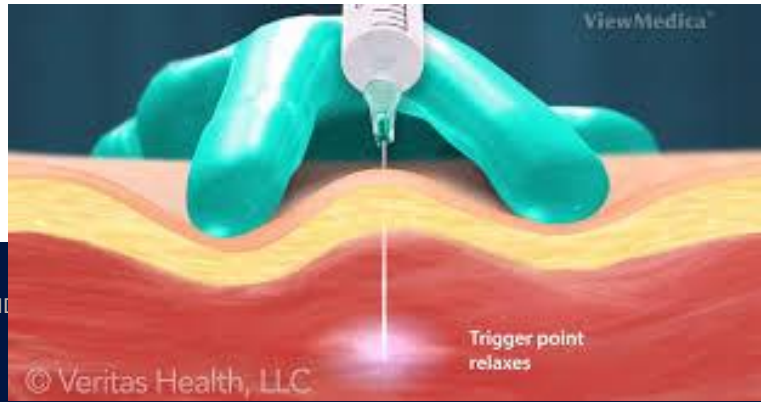
Implementation: Is this possible?

Step 1: ID Project Champions

- ED Nursing
  - Director, charge RNs, staff
- ED Physicians
  - Director, staff
- Hospital Leadership
  - CNO, CMO, CEO
- Other Support
  - IT
  - Pharmacy
  - Quality
  - Marketing/Communication

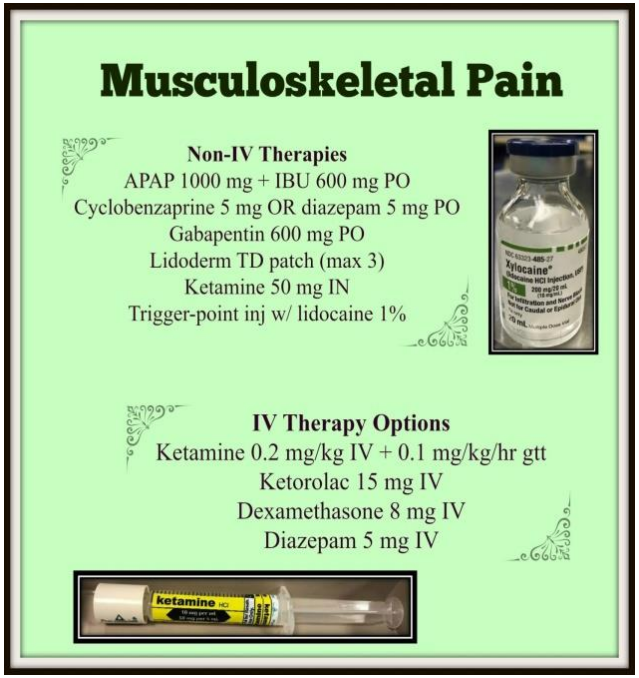
Step 2: Provider Education

- Physicians teach physicians
  - Training sessions on trigger point injections and nerve blocks
  - Scripting on how to manage up ALTO options
- Partner with pharmacy to create opioid-free pain management orderset
  - Organized by indication
- Utilization of outpatient prescribing guidelines
  - For when discharging patients home
  - Inclusion of many oral options for each indication
- Internal publication of opioid prescribing patterns



Step 3: Nursing Education

- Nurses teach nurses – teach the teacher model
  - Utilized annual “Skills Days” to train all staff
- Learn about the new multimodal, ALTO pathways
  - Education boards
  - Weekly newsletters
  - Podcasts (see last slide)
  - Webinars
  - Badge buddies
- Be proactive with patient and family concerns
  - Begin conversation regarding best practices to manage pain
  - Manage pain control expectations – talk about realistic pain goals
  - Utilize AIDET-based scripting: “control” of pain versus “relief” of pain
  - Promote “increasing comfort”



Step 4: Patient Education

- Patients
  - Educate patients and families on pain assessment tools
  - Provide non-pharmacologic alternatives to medication
    - Warm blankets, ice packs, dim lights, music
  - Handout educational pamphlets
    - ALTO approach to pain management
    - Risks or opioids
- Marketing
  - Reach out to community partners to promote the ALTO approach
  - Work with ED staff on creating educational boards, handouts, and signs to advertise ALTO and set expectations
    - Tell the “why”

Step 5: Pharmacy

- Policy Changes
  - Procedural Sedation
    - Ketamine dosing – clearly define analgesia vs sedation doses
  - High-risk Medication Administration
    - Lidocaine administration
    - Ketamine administration
- Smart Pumps
  - Addition of new medications – clearly label “for pain”
    - Lidocaine
    - Ketamine
- Stocking of ALTO medications

Step 6: IT & Data

- CPOE
  - Creation of ALTO-based pain management order set
  - Create order strings for unique entries – clearly label “for pain”
- Data Collection
  - Opioid and ALTO usage reports built in Meditech
  - Other reports off the dashboard to characterize patient population

Timeline for Success

6 months prior

- Enlist project champions throughout hospital
- Work with IT to create ED ALTO order set

3 months prior

- Begin educating nurses and physicians on new medications, orders, and scripting
- Update high risk med and procedural sedation policies

1 month prior

- Stock medications in ED
- Program smart pumps for new medications
- Marketing push to the hospital and community

https://cha.com/wp-content/uploads/2018/01/CHA-Opioid-Checklist.pdf

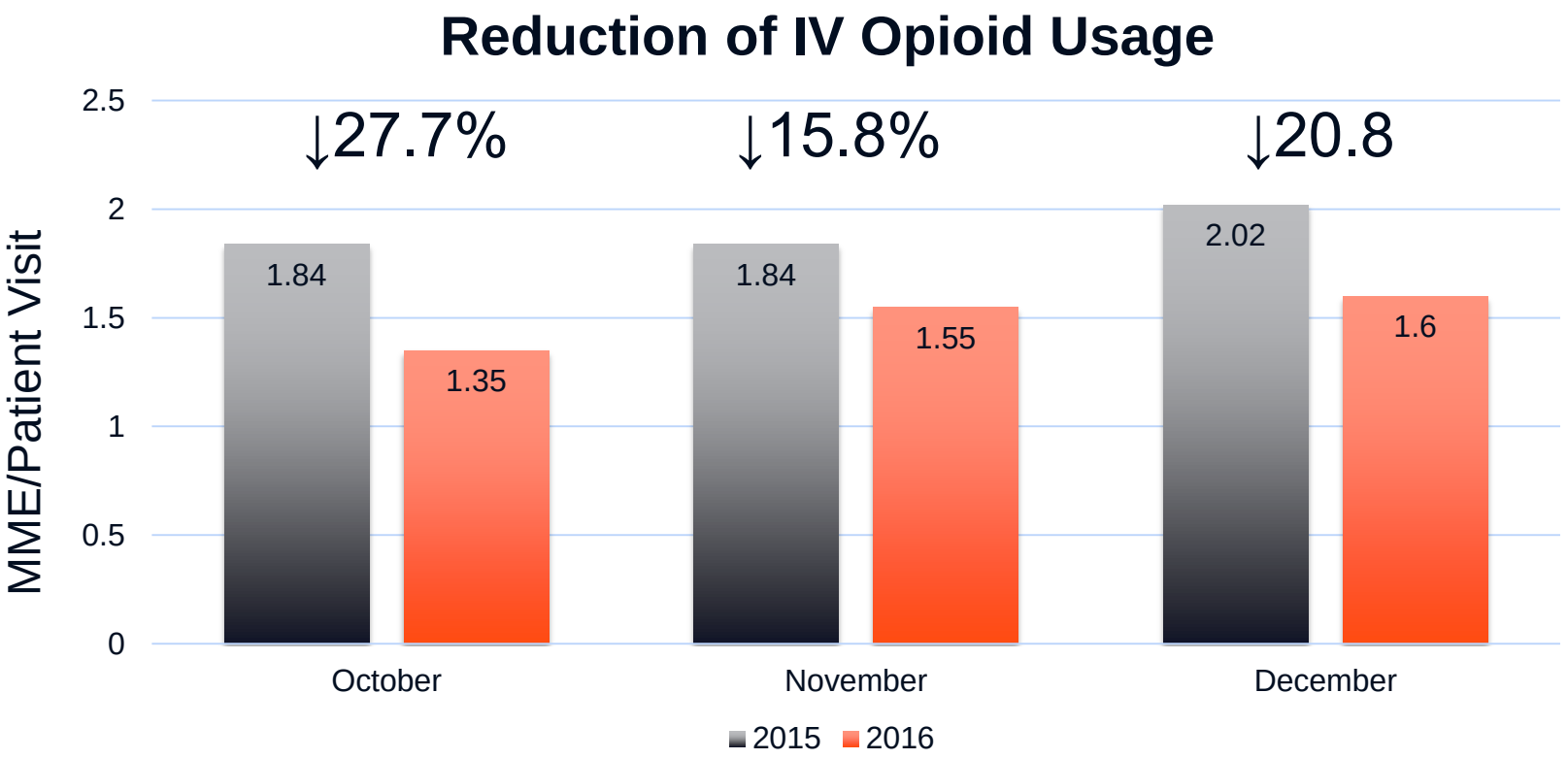
Success in Action: Swedish ED Pilot Results

Data Collection

- Implementation = September 2016
  - Compared 2016 data to 2015 data
- **Primary outcome** = change in ED IV opioid use pre- and post-implementation
  - Measured in morphine dosing equivalents
  - Per ED patient visit
- **Secondary outcome** = patient satisfaction
  - Press Ganey Scores
    - How likely are you to recommend this facility?
    - How well was your pain controlled?

**Data is not yet published

Swedish Results



Mean IV MME/visit in 2015 vs 2016 = 1.9 vs 1.5 (*p*=0.0146), a reduction of over 20%

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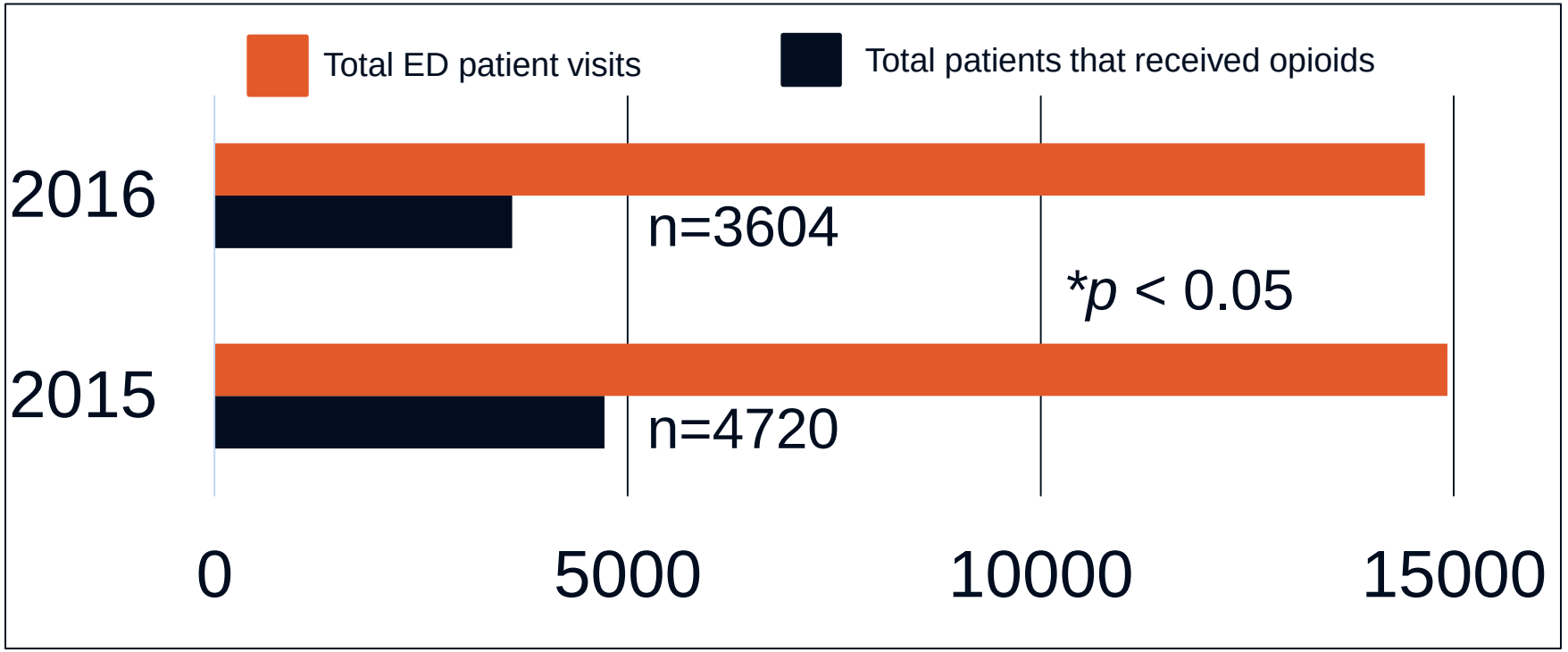
Patients Receiving Opioids During ED Stay

*Total of 29,494 (14,800 in 2015, 14,694 in 2016) visits in the ED



*Almost 1000 less patients received an opioid in the ED following the initiation of opioid reduction initiatives

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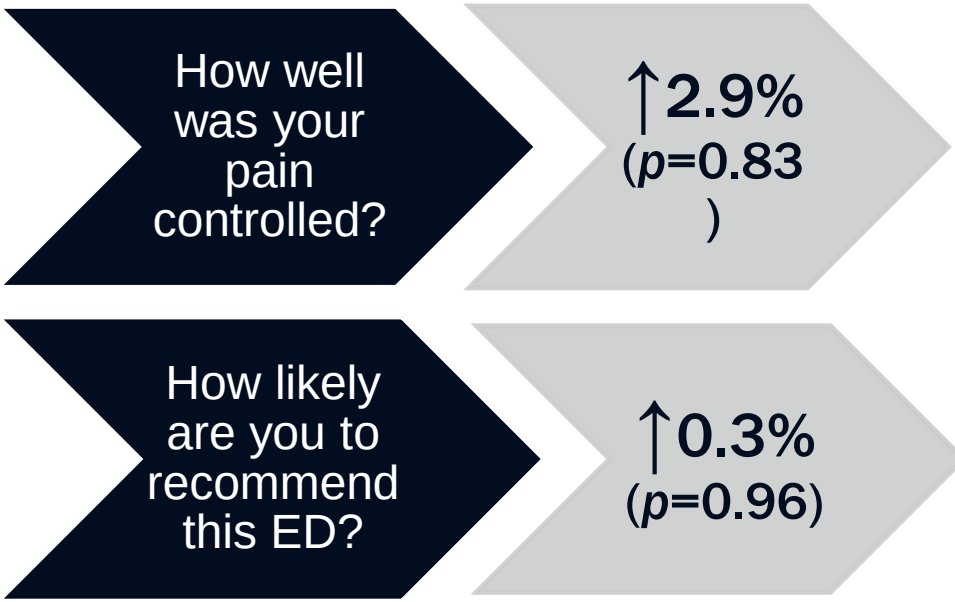
Press Ganey Patient Satisfaction Scores

*Patient satisfaction scores remained consistent!



*No significant difference between 2015 and 2016 responses for each question after adjusting for age, sex, and race

State-Wide Opioid Taskforce

- Colorado Opioid Safety Collaborative
  - Colorado Hospital Association
  - Swedish Medical Center ED Opioid Reduction Pilot
  - CO ACEP Opioid Taskforce
    - https://cha.com/wp-content/uploads/2018/01/COACEP_Opioid_Guidelines-Final.pdf
  - Colorado Consortium
  - Colorado Emergency Nurses Association
- Expand Swedish pilot to 10 other ED pilot sites in CO
  - Data collection: 6 months pre- and post- implementation
    - Goal = 15% reduction in opioid administration

Overall Results from Pilot

36% ↓

in opioid administration

Measured in MEUs/1,000 ED visits across all 10 EDs

2017 vs. 2016

31% ↑

in ALTO administration

35,000

fewer projected opioid administrations during the pilot than during the baseline period

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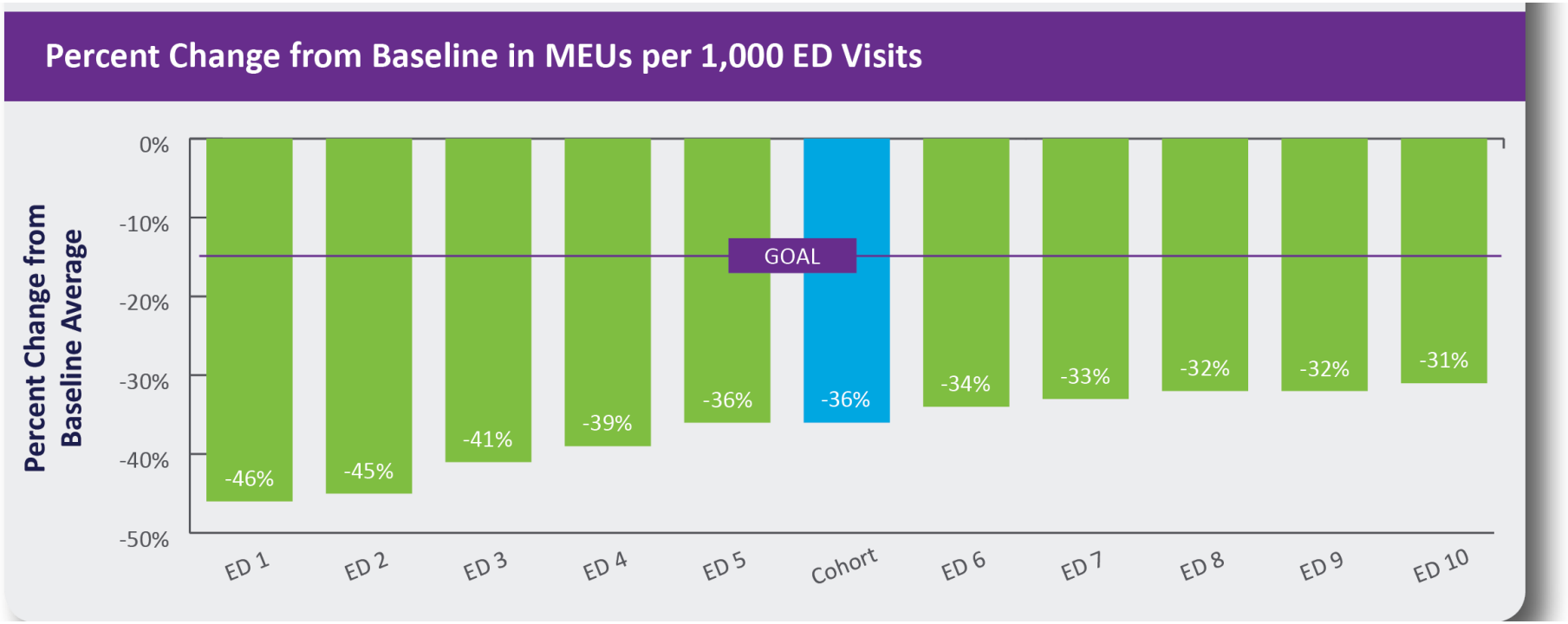
Overall Results – By Site



https://cha.com/wp-content/uploads/2018/01/CHA.090-Opioid-SummitReport_web2.pdf

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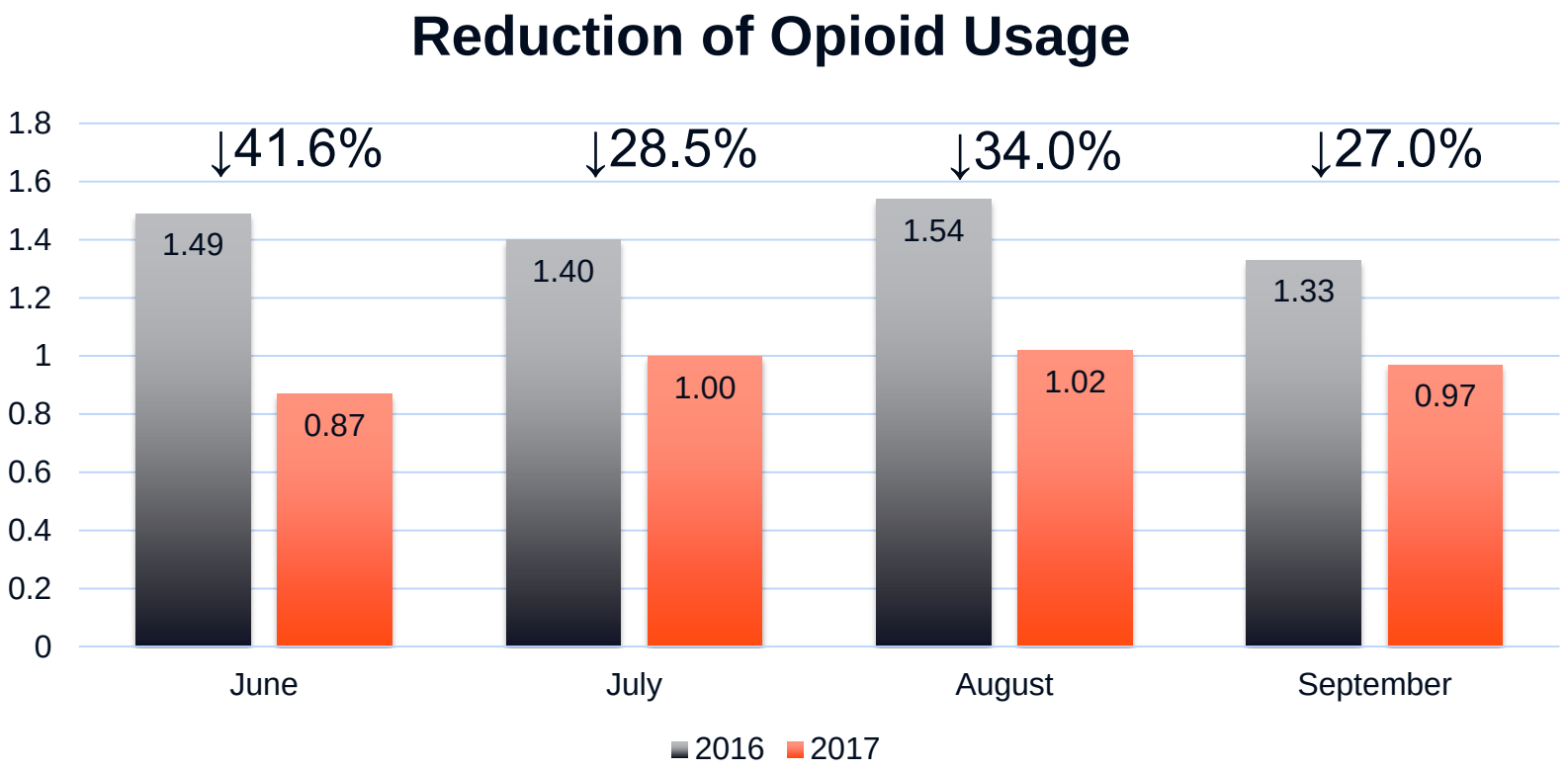
Statewide Pilot: Swedish Data



**Post-pilot results show an almost 50% decrease in overall ED opioid usage since implementation of opioid-reduction initiatives in 2015

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Lessons Learned

- Change is possible!!
- Collaborate – don’t feel isolated; reach out to other facilities
- Tell the “why” – have all members take ownership of the opioid crisis
- Partner with your marketing department for messaging to community
- Have a communication plan for within the facility
  - ALTOs will trickle to the inpatient side!
- Do the little things to ensure success – prelaunch checklist
- Include patients when making decisions to manage pain
- Gather metrics to show if change is effective
- Share successes with department

Other Educational Material

Opioid reduction podcasts:

https://emergencymedicalminute.com/opioid-miniseries/

Itunes – Emergency Medical Minute

emergencymedicalminute.com

Contact Information

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